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ENGINEERING CHANGE NOTICE

1. ECN 635336

Proj. ECN

2. ECN Category (mark one)	3. Originator's Name, Organization, MSIN, and Telephone No.	4. USQ Required?	5. Date
Supplemental [] Direct Revision [X] Change ECN [] Temporary [] Standby [] Supersedure [] Cancel/Void []	John M. Conner, Data Assessment and Interpretation, R2-12, 373-2711	[] Yes [X] No	08/20/96
	6. Project Title/No./Work Order No.	7. Bldg./Sys./Fac. No.	8. Approval Designator
	Tank 241-B-103	241-B-103	N/A
	9. Document Numbers Changed by this ECN (includes sheet no. and rev.)	10. Related ECN No(s).	11. Related PO No.
	WHC-SD-WM-ER-488, Rev. 0-A	ECN-625703	N/A

12a. Modification Work	12b. Work Package No.	12c. Modification Work Complete	12d. Restored to Original Condition (Temp. or Standby ECN only)
[] Yes (fill out Blk. 12b) [X] No (NA Blks. 12b, 12c, 12d)	N/A	N/A Design Authority/Cog. Engineer Signature & Date	N/A Design Authority/Cog. Engineer Signature & Date

13a. Description of Change

13b. Design Baseline Document? [] Yes [X] No

This ECN is being generated in order to exchange page 4-2. The overall mean and tank inventory for the total alpha results were corrected.

14a. Justification (mark one)

Criteria Change	[]	Design Improvement	[]	Environmental	[]	Facility Deactivation	[]
As-Found	[]	Facilitate Const	[]	Const. Error/Omission	[]	Design Error/Omission	[X]

14b. Justification Details

The overall mean and tank inventory for the total alpha results were calculated incorrectly in the original release of this document.

15. Distribution (include name, MSIN, and no. of copies)

See attached distribution.

RELEASE STAMP

AUG 22 1996

STA. 4

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ENGINEERING CHANGE NOTICE

1. ECN (use no. from pg. 1)
ECN-635336

16. Design Verification Required	17. Cost Impact				18. Schedule Impact (days)	
	ENGINEERING		CONSTRUCTION			
[ ] Yes	Additional	[ ] $	Additional	[ ] $	Improvement	[ ]
[X] No	Savings	[ ] $	Savings	[ ] $	Delay	[ ]

19. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 13. Enter the affected document number in Block 20.

SDD/DD	[ ]	Seismic/Stress Analysis	[ ]	Tank Calibration Manual	[ ]
Functional Design Criteria	[ ]	Stress/Design Report	[ ]	Health Physics Procedure	[ ]
Operating Specification	[ ]	Interface Control Drawing	[ ]	Spares Multiple Unit Listing	[ ]
Criticality Specification	[ ]	Calibration Procedure	[ ]	Test Procedures/Specification	[ ]
Conceptual Design Report	[ ]	Installation Procedure	[ ]	Component Index	[ ]
Equipment Spec.	[ ]	Maintenance Procedure	[ ]	ASME Coded Item	[ ]
Const. Spec.	[ ]	Engineering Procedure	[ ]	Human Factor Consideration	[ ]
Procurement Spec.	[ ]	Operating Instruction	[ ]	Computer Software	[ ]
Vendor Information	[ ]	Operating Procedure	[ ]	Electric Circuit Schedule	[ ]
OM Manual	[ ]	Operational Safety Requirement	[ ]	ICRS Procedure	[ ]
FSAR/SAR	[ ]	IEFD Drawing	[ ]	Process Control Manual/Plan	[ ]
Safety Equipment List	[ ]	Cell Arrangement Drawing	[ ]	Process Flow Chart	[ ]
Radiation Work Permit	[ ]	Essential Material Specification	[ ]	Purchase Requisition	[ ]
Environmental Impact Statement	[ ]	Fac. Proc. Samp. Schedule	[ ]	Tickler File	[ ]
Environmental Report	[ ]	Inspection Plan	[ ]		[ ]
Environmental Permit	[ ]	Inventory Adjustment Request	[ ]		[ ]

20. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number Revision
N/A		

21. Approvals

Signature	Date	Signature	Date
Design Authority		Design Agent	
Cog. Eng. J.M. Conner	8-20-96	PE	
Cog. Mgr. J.G. Kristofzski	8-21-96	QA	
QA		Safety	
Safety		Design	
Environ.		Environ.	
Other		Other	
		DEPARTMENT OF ENERGY	
		Signature or a Control Number that tracks the Approval Signature	
		ADDITIONAL	

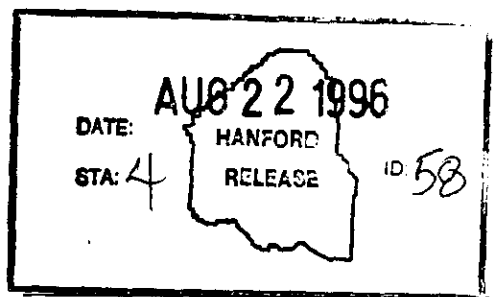
Tank Characterization Report for Single-Shell Tank 241-B-103

John M. Conner
Westinghouse Hanford Company, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-87RL10930

EDT/ECN: ECN-635336 UC: 2070
Org Code: 79400 Charge Code: N4G4D
B&R Code: EW 3120074 Total Pages:

Key Words: Waste Characterization, Single Shell Tank, SST, Tank 241-B-103, Tank B-103, B-103, B Farm, Tank Characterization Report, TCR, Waste Inventory, TPA Milestone M-44

Abstract: N/A



Release Approval 8/22/96 Date

Release Stamp

Approved for Public Release

RECORD OF REVISION	(1) Document Number WHC-SD-WM-ER-488	Page 1

(2) Title
Tank Characterization Report for Single-Shell Tank 241-B-103

CHANGE CONTROL RECORD

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release	
		(5) Cog. Engr.	(6) Cog. Mgr. Date
0	(7) Initially released 08/07/95 on EDT-611435.	J.M. Conner	J.G. Kristofzski
0-A RS	Incorporate per ECN-625703.	S.E. Kelly 9/19/95	J.G. Kristofzski 9/19/95
RS 0-B	Incorporate per ECN-635336.	J.M. Conner	J.G. Kristofzski
			J.M. Conner for JGK 8/21/96

4.2 TOTAL ALPHA ACTIVITY

Analyses for total alpha activity were performed on two samples from tank 241-B-103. These samples were prepared by fusion using laboratory procedure LA-549-141, Rev. C-3, and analyzed using laboratory procedure LA-508-101, Rev. D-2. Two fusions were prepared for each sample (for duplicate analyses). Each fused dilution is analyzed twice; the results are averaged and reported as one value.

Table 4-2 presents the total alpha activity taken from the 45-day report for tank 241-B-103 (Conner 1995). The total alpha tank inventory was calculated using the mean value for total alpha (in μCi/g) and a total solid waste weight of 344,000 kg from Table 2-4.

The large difference between sample results indicates that the tank is heterogeneous. The riser 7 samples were described as gray/black crystals, while the riser 2 sample was described as yellow and brown sludge. All results are less than 1 percent of the safety screening action limit of 41 μCi/g. As discussed in Section 5.1.1, the auger sampler is biased towards retention of solids. As alpha emitters are expected to be concentrated largely in the solids (waste is non-complexed), this results in a conservative estimate of the total alpha concentration in the tank. Quality control considerations for these samples are discussed in Section 5.1.2.

Table 4-2. Tank B-103 Total Alpha Activity Results.

Sample identification	Result (μCi/g)	Duplicate (μCi/g)	Sample mean (μCi/g)	Overall mean (μCi/g)	Tank inventory (Ci)
Riser 7, S95T000973	0.0865	0.125	0.106	0.214	73.6
Riser 2, S95T001117	0.299	0.345	0.322		

Notes:

μCi/g	=	microcuries/gram
Ci	=	curies
g	=	gram
1 Ci	=	3.7E+10 becquerel (Bq)

DISTRIBUTION SHEET

To	From	Page 1 of 4
Distribution	Data Assessment and Interpretation	Date 08/20/96
Project Title/Work Order		EDT No. N/A
Tank Characterization Report for Single-Shell Tank 241-B-103, WHC-SD-WM-ER-488, Rev. 0-B		ECN No. ECN-635336

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
OFFSITE					
Sandia National Laboratory P.O. Box 5800 MS-0744, Dept. 6404 Albuquerque, NM 87815					
D. Powers		X			
Nuclear Consulting Services Inc. P. O. Box 29151 Columbus, OH 43229-01051					
J. L. Kovach		X			
Chemical Reaction Sub-TAP P.O. Box 271 Lindsborg, KS 67456					
B. C. Hudson		X			
Tank Characterization Panel Senior Technical Consultant Contech 7309 Indian School Road Albuquerque, NM 87110					
J. Arvisu		X			
U. S. Department of Energy - Headquarters Office of Environmental Restoration and Waste Management EM-563 12800 Middlebrook Road Germantown, MD 20874					
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Jacobs Engineering Group	B5-36	X			

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H. Sutter		X			
555 Quince Orchard Rd., Suite 500 Gaithersburg, MD 20878					
P. Szerszen		X			
Los Alamos Laboratory CST-14 MS-J586 P. O. Box 1663 Los Alamos, NM 87545					
S. F. Agnew (4)		X			
Los Alamos Technical Associates					
T. T. Tran	B1-44	X			
Ogden Environmental 101 East Wellsian Way Richland, WA 99352					
R. J. Anema		X			
CH2M Hill P. O. Box 91500 Bellevue, WA 98009-2050					
M. McAfee		X			
Tank Advisory Panel 102 Windham Road Oak Ridge, TN 37830					
D. O. Campbell		X			

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Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
ONSITE					
Boeing Computer Services of Richland					
B. G. Lauzon	R1-08	X			
Department of Energy - Richland Operations					
J. F. Thompson	S7-54	X			
W. S. Liou	S7-54	X			
N. W. Willis	S7-54	X			
ICF-Kaiser Hanford Company					
R. L. Newell	S3-09	X			
Pacific Northwest Laboratory					
N. G. Colton	K3-75	X			
J. R. Gormsen	K7-28				X
S. A. Hartley	K5-12	X			
J. G. Hill	K7-94	X			
G. J. Lumetta	P7-25	X			
A. F. Noonan	K9-81	X			
Westinghouse Hanford Company					
H. Babad	S7-14	X			
D. A. Barnes	R1-80	X			
G. R. Bloom	H5-61	X			
J. M. Conner	R2-12	X			
W. L. Cowley	A3-37	X			
L. A. Diaz	T6-06	X			
G. L. Dunford	A2-34	X			
E. J. Eberlein	R2-12				X
D. B. Engelman	R1-49	X			
J. S. Garfield	H5-49	X			
J. D. Guberski	R1-51				X
D. L. Herting	T6-09	X			
D. C. Hetzer	S6-31	X			
G. Jansen	H6-33	X			
G. D. Johnson	S7-15	X			
T. J. Kelley	S7-21	X			
N. W. Kirch	R2-11	X			

Advanced Not Done

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Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
Westinghouse Hanford Company continued					
M. J. Kupfer	H5-49	X			
J. E. Meacham	S7-15	X			
W. C. Miller	R1-56	X			
C. T. Narquis	T6-16	X			
D. E. Place	H5-27	X			
D. A. Reynolds	R2-11	X			
L. M. Sasaki	R2-12	X			
L. W. Shelton, Jr.	H5-49	X			
B. C. Simpson	R2-12	X			
G. L. Troyer	T6-50	X			
L. R. Webb	T6-06	X			
K. A. White	S5-13	X			
~~TFIC (Tank Farm Information Center)~~	~~R1-20~~	~~X~~			
Central Files	A3-88	X			
EDMC	H6-08	X			
ERC (Environmental Resource Center)	R1-51	X			
~~OSTI (2)~~	~~A3-36~~	X			
TCRC (10)	R2-12	X			